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CUCUMBER AND CANTALOUPE BLIGHT.

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The cucumber and cantaloupe crops in Florida are attacked every year by a disease known in different localities as Blight, Rust, or Fire Blight. This blight causes greater or less loss to the grower, depending upon weather conditions. The disease is favored by rains and cloudy weather. In seasons of little rain and plenty of bright days the blight makes slow progress. In the spring of 1913, the cucumber crop was badly attacked in the Southern part of the State. The season was exceptionally wet and cloudy, and consequently the blight caused a heavy loss.

Symptoms of the Disease

The disease makes its first appearance in the field on the older leaves at the center of the plant. Yellow angular spots bordered by veins will be detected. These become more distinct, and if the weather is favorable there appears underneath the spot a faint violet powder, which consists of the spores of the fungus. The older leaves are always affected first, and the young leaves at the tips remain green the longest.

Preventive Measures

The growers rarely make preparation to combat the disease until the crop is badly affected, when it is too late. Spraying with Bordeaux mixture is a good **preventive,** but is not a **cure** for the disease. It has been shown that if the vines are sprayed thoroughly with Bordeaux mixture the disease can be controlled. The spraying, however, must be commenced when the plants are young, and be repeated every week or ten days. The first spraying should be made when the plant has about four leaves. It is essential to keep all the young leaves coated with the mixture. The copper in the spray is poisonous to the germinating spores of the fungus. It is nec-

essary, therefore, in order to keep the vines healthy, that the foliage should be kept covered with the mixture.

Spraying for Blight

A spraying experiment was carried on, in co-operation with a grower, for the purpose of testing the efficiency of Bordeaux mixture in controlling blight. On account of the delay in receiving the spraying machine, the work was somewhat belated. But good results were obtained in spite of this. Bordeaux mixture, (4-6-50) was used in this experiment. The machine was one which had the pump geared to the wheels. The barrel held fifty gallons, and the nozzles were so arranged that five rows could be sprayed at one time. But on account of the inefficiency of the pump, only thirty gallons of the spray were applied per acre. Not less than fifty gallons should be applied to an acre.

The sprayed rows kept a greener color during the season, and they yielded more cucumbers than the unsprayed rows. Four applications were made during the season, with a week or ten days between each spraying. The cost of spraying was figured on the basis of four sprayings for 23 acres. The cost of teams and labor was $28, and the material cost $35; making a total of $63.

The average price of cucumbers being $1.50 per basket; the gross gain by spraying on 23 acres was $300.50. Deducting the cost of spraying, which was $63, and $25 for deterioration of the machine, the net gain on 23 acres was $212.50.

Cause of the Disease

Cucumber and cantaloupe blight is caused by a fungus known as **Pseudoperonospora cubensis.** The disease is spread by the spores, which are borne on the under side of the leaf, and, as stated above, have in mass a faint violet or smoky color. The spores fall on the upper side of the leaf, germinate, and penetrate the epidermis. After the fungus enters the leaf, it grows in the tissues and kills the cells. Finally the fungus again bears its spores on the under surface, and these are blown about by the wind to start new infections.

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